



Utah

Office of Energy Development

CASE STUDY

Utah Farmer Sees Opportunity to Cut Energy Use by 50 Percent

For farmer and rancher Joel Ferry, conservation has always been important. After earning a degree in finance and working as a banker, Joel returned to farming in 2008 to take over the businesses that had been in his family for five generations.

Since returning to his roots in agriculture, Joel has always looked for ways to conserve water and protect wetlands. He sits on the board of the Utah Waterfowl Association and the advisory council for the Utah Division of Wildlife Resources, and the Davis County Farm Bureau. Especially in light of recent drought conditions in northern Utah, Joel wants to do all he can to save energy and water.

He has been concerned about the energy used for his irrigation practices, which is why he signed up for a Landscape Agricultural Energy Management Plan (AgEMP) for both the Joel M. Ferry Farm, a 3,200-acre grain farm, and Little Mountain Cattle

Co., a 3,800-acre cattle operation. The two AgEMP's identified over \$30,000 in annual energy savings from switching diesel-powered irrigation pumps to electric and by expanding his use of no-till practices. These two practices will pay for themselves in about four years.

"I've already invested in making my irrigation pumps as efficient as possible," Joel says. "But I was glad to see how much I could save by switching them from diesel-powered to electric-powered." On Joel M. Ferry Farm, he is reducing his diesel use by 70 percent and his overall energy use by 50 percent. Little Mountain Cattle Co. is saving 35 percent of its diesel use.

Following the completion of the AgEMP, Joel applied for funding for the diesel to electric conversion from NRCS. Producers receiving AgEMP's are able to use the report to access additional funding for implementation of the recommended measures. "I would encourage other producers looking to

make a change on their farm, or who need help deciding what change to make, to have an AgEMP completed," Joel says. "If there's funding available, producers should be able to access it."

The USDA Natural Resources Conservation Service (NRCS) offers financial assistance for the AgEMP's as well as implementation of recommended measures, making it easy for producers to discover and install energy-efficiency improvements.

AgEMP's are funded by NRCS and performed by qualified Technical Service Providers—energy experts familiar with farm energy auditing.

To participate, farmers should contact their local NRCS service center to sign up for funding.

Technical Service Provider EnSave, Inc. made several recommendations for cost-effective energy efficiency improvements, as shown below and on the back side.

Joel M. Ferry Farm	Estimated Reduction in Energy Use			Estimated Costs, Savings, Payback, & Prioritization for Implementation		
	Diesel Savings (Gallons)	Electric Savings (Increase)	Energy Savings (MMBtu)	Installed Cost (Dollars)	Energy Cost Savings (Dollars)	Estimated Payback in Years
Irrigation Fuel Switch	10,282	(62,880)	1,215	\$109,990	\$27,554	4.0

ENERGY EFFICIENT CHANGES FOR LITTLE MOUNTAIN CATTLE CO.



Other opportunities for saving fuel energy on the working landscape of a farm include:

- ❑ implementing the use of precision technology on tractors and other mobile equipment to reduce overlap.
- ❑ combining field operations where possible, such as applying fertilizers through the planter.
- ❑ making sure tractor-drawn implements such as tillage tools are matched to an appropriately sized tractor.
- ❑ implementing a regular maintenance schedule for all mechanized equipment.

BEST PRACTICE:

▲ Conservation Tillage

Conservation tillage is the practice of reducing or eliminating tillage of the soil. This practice saves diesel fuel by reducing the tractor use in the field. Conservation tillage also has beneficial impacts on soil health and reduces erosion risk, and can also save money by reducing required labor.

BEST PRACTICE:

▲ Irrigation Fuel Switch

Compressor heat recovery units use heat recovered from the refrigeration system to pre-heat water before it enters the water heater.

“I’ve already invested in making my irrigation pumps as efficient as possible, but I was glad to see how much I could save by switching them from diesel-powered to electric-powered.”

— JOEL M. FERRY

Little Mountain Cattle Co.	Estimated Reduction in Energy Use			Estimated Costs, Savings, Payback, & Prioritization for Implementation		
SAVINGS MEASURE	Diesel Savings (Gallons)	Electric Savings (Increase)	Energy Savings (MMBtu)	Installed Cost (Dollars)	Energy Cost Savings (Dollars)	Estimated Payback in Years
Tillage Practices	85	—	12	\$0	\$282	0
Irrigation	1,380	(11,328)	153	\$14,241	\$3,130	4.6
Totals	1,465	(11,328)	165	\$14,241	\$3,412	4.2